

EchoONE

POWERED BY INERTIAL LABS RESEPI

A secure, NDAA-compliant lightweight airborne laser scanner for WISPR SkyScout and Ranger Pro, delivering colorized, engineering-grade LiDAR point clouds.



270M
LASER RANGE

90°
FIELD OF VIEW

5MM
RANGE PRECISION

1.2KG
WEIGHT

NDAA
COMPLIANT

System

Absolute Accuracy	1.5 cm RMSEz @ 120 m
Example Area Coverage	695 acres / 281 ha 30 min, 400 ft/120 m agl, 8 m/s, 20% sidelap

Laser

Pulse Repetition Frequency	400 kHz / 600 kHz
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Effective PRF	316 kHz / 474 kHz
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Max Measuring Range (20%)	270 m / 225 m
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Max Operating Altitude (20%)	205 m / 170 m
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Returns	Up to 8 per pulse 0.7 m minimum target separation
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Range Accuracy / Precision	10 mm / 5 mm (1σ)
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Beam Divergence (1/e2)	0.5 mrad
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Minimum Range	3.0 m
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Horizontal Field-of-View	90 deg
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Vertical Scan Lines	-10, -4, +4, +10 deg
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Lines Per Second	Up to 250
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Wavelength	1535 nm
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Laser Classification	Class 1 (IEC 60825-1:2014)
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Camera

Internal	5 MP Global Shutter, 80 deg FOV
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External	Optional Sony ILX-LR1 61MP
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Highlights

- Eye-safe 270 m laser with canopy penetration
- 90° wide swath, 4 vertical scan angles
- Realtime georeferenced point cloud on-sensor
- Inertial Labs KERNEL-210 tactical-grade IMU
- Lightest-in-class UAV scanner at 1.2 kg

GPS-Aided INS

Constellations	GPS, GLONASS, Galileo, BeiDou, QZSS, NavIC (IRNSS), SBAS, L-Band
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Frequencies	L1, L2, L5
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Pitch / Roll Accuracy	0.03° (RTK); 0.006° (PPK)
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Heading Accuracy	0.08° (RTK); 0.03° (PPK)
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Physical

Size	170 mm L x 144 mm H x 110 mm W
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Weight	1.2 kg
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Power	60 W, 9-50 V
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Environmental

Operating Temperature	-10°C to +50°C
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Storage Temperature	-40°C to +85°C
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Ingress Rating	IP54
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Compliance	NDAA, CE, RoHS, WEEE, REACH
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Operational

Communication	WLAN, WiFi
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Onboard Storage	512 GB
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Removable Storage	USB
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SOFTWARE

Inertial Labs PCMaster Pro (one-click post-processing, colorization, point-cloud visualization) with optional Teledyne LMS Pro for calibration, boresight, strip alignment, and QC.

OPTIONS

Gremsy payload interface, external Sony ILX-LR1 61MP camera, and Teledyne LMS Pro.

NDAA COMPLIANT / DATA SECURITY

Designed, developed, and manufactured to meet FY2020 NDAA Sec 848 and FY2023 NDAA Sec 817 for projects requiring data safety and security.